What is claimed is:

1. A method of propagating motion through an array of microscopic particles that are initially in a substantially fixed spatial relationship with respect to each other and with respect to a matrix that acts as a host material for holding the particles, each of the particles including at least one atom, comprising:

selecting a first one of the particles;

moving the first particle, so that (i) movement of a second particle that is in proximity with the first particle is induced as a result of physical interaction between the first particle and the second particle, and (ii) movement of a third particle that is in proximity with the second particle is induced as a result of physical interaction between the second particle and the third particle; and

sequentially inducing movement of other particles in the array in a similar fashion, so that motion propagates through the array, wherein said propagation of motion represents information.

2. The method of Claim 1, wherein the array of particles is disposed on a surface of the matrix.

3. The method of Claim 2, wherein said movement includes translational movement of particles across the surface.

4. The method of Claim 1, wherein said second particle is adjacent to said first particle.

5. The method of Claim 1, wherein said particles are molecules.

6. The method of Claim 5, wherein the molecules are diatomic.

7. The method of Claim 1, wherein not all of the particles in the array move.

8. A method of propagating motion through an array of microscopic particles that are initially in a substantially fixed spatial relationship with respect to each other and with respect to a matrix that acts as a host material for holding the particles, each of the particles including at least one atom, comprising:

selecting a first one of the particles;

moving the first particle, so that (i) movement of a second particle that is in proximity with the first particle is induced as a result of physical interaction between the first particle and the second particle, and (ii) movement of a third particle that is in proximity with the second particle is induced as a result of physical interaction between the second particle and the third particle; and

sequentially inducing movement of other particles in the array in a similar fashion, without inducing movement of all the particles in the array, so that motion propagates through the array, wherein the chemical structure of the particles remains unaltered during said propagation.

9. The method of Claim 8, wherein the array of particles is disposed on a surface of the matrix.

10. The method of Claim 9, wherein said movement includes translational movement of particles across the surface.

11. The method of Claim 8, wherein said second particle is adjacent to said first particle.

12. The method of Claim 8, wherein said propagation of motion represents information.

13. The method of Claim 8, wherein the particles are molecules.

14. The method of Claim 13, wherein the molecules are diatomic.

15. The method of Claim 13, wherein the molecules are carbon monoxide molecules.

16. A method of performing logic computations, comprising:

providing an array of discrete microscopic particles, each of the particles including at least one atom, the array including at least first, second, and third ones of the particles;

moving at least one of the first and second particles; and

inducing movement in the third particle as a result of at least one of i) physical interaction between the first particle and the third particle and ii) physical interaction between the second particle and the third particle, wherein said third particle is urged into a lower potential energy state, and wherein said movement of the third particle represents output of a logic computation.

17. The method of Claim 16, comprising:

moving the first particle, thereby urging the first particle into a lower potential energy state; and

moving the second particle, thereby urging the second particle into a lower potential energy state, wherein movement of the third particle is induced as a result of i) physical interaction between the first particle and the third particle and ii) physical interaction between the second particle and the third particle, the array of discrete particles forming an AND gate.

18. The method of Claim 16, wherein the array of discrete particles forms an OR gate.

19. The method of Claim 16, wherein:

movement of the first particle is induced by moving a fourth particle, in which the fourth particle physically interacts with the first particle; and

movement of the second particle is induced by moving a fifth particle, in which the fifth particle physically interacts with the second particle.

20. The method of Claim 16, wherein the microscopic particles are respective molecules.

21. The method of Claim 16, wherein the microscopic particles are initially bound to a surface of the matrix.

22. The method of Claim 21, wherein the particles hop from one site on the surface to an adjacent site on the surface.

23. An array of discrete, microscopic particles that are initially in a substantially fixed spatial relationship with respect to each other and with respect to a matrix that acts as a host material for holding the particles, wherein:

each of said particles includes at least one atom, said array including at least first, second, and third ones of said particles; and

said particles are arranged to perform a logic computation, so that in response to at least one of said first and said second particles being urged into a lower potential energy state, movement of said third particle is induced as a result of at least one of i) physical interaction between said first particle and said third particle and ii) physical interaction between said second particle and said third particle.

24. The array of Claim 23, wherein movement of said third particle is induced as a result of i) physical interaction between said first particle and said third particle and ii) physical interaction between said second particle and said third particle, said array of discrete particles forming an AND gate.

25. The array of Claim 23, wherein said array of discrete particles forms an OR gate.

26. The array of Claim 23, wherein:

movement of said first particle is induced as a result of moving a fourth particle in said array, in which said fourth particle physically interacts with said first particle; and

movement of said second particle is induced as a result of moving a fifth particle in said array, in which said fifth particle physically interacts with said second particle.

27. The array of Claim 23, wherein said particles are molecules.

28. The array of Claim 27, wherein said molecules are arranged on a surface of said matrix.

29. The array of Claim 23, further comprising additional particles whose presence in said array acts to induce movement of said third particle more quickly than would occur in the absence of said additional particles.